

## **Semiconductor Chip Package**

### **ABSTRACT**

A semiconductor chip package includes an integrated circuit chip and a substrate. A chip contact pad is formed on a first side of the chip. A stud is formed on the chip contact pad from wire using a wire bonding machine. The stud has a partially squashed ball portion bonded to the chip contact pad. The stud also has an elongated portion extending from the partially squashed ball portion. A first layer of insulating material is on a first side of the substrate. A bottomed well is formed in the first layer and opens to the first side of the substrate. A first conductive material at least partially fills the well. The first conductive material is electrically connected to at least one trace line in the substrate. The stud is partially embedded in the first conductive material to form an electrical connection between the chip and the substrate.